REMARKS

This amendment is responsive to the communication of January 24, 2003. Reconsideration of claims 1-9 and 11-25 is respectfully requested.

The Office Action

The drawings were objected to as failing to show every feature of invention.

The specification and claims 23-25 were objected to because of the informalities.

Claims 19-22 stand rejected under 35 U.S.C. § 112, second paragraph.

Claims 1-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over "prior art" in view of Zhang (U.S. Patent Publication No. US 2002/0021573).

Claims 10, 12, 13, 15-17, and 23-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over "prior art" in view of Terlep (U.S. Patent No. 5,594,433) and Zhang (U.S. Patent Publication No. US 2002/0021573).

Claim 10 has been cancelled.

Objections to the Drawings

The drawings were objected to as failing to depict a unitary threadedly connectable LED-based light source comprising a threaded connector, power converting electronics, a plurality of LEDs, an optical system including a reflector and a lens, and a light dispersing element arranged at a focal region.

Applicants respectfully traverse. Section 1.81(a) requires the applicant ". . . to furnish a drawing of his or her invention where necessary for the understanding of the subject matter sought to be patented . . ." Applicants submit that the illustration of a unitary threadedly connectable LED-based light source comprising a threaded connector power converting electronics, a plurality of LEDs, an optional system including a reflector and a lens, and a light doping element arranged at a focal region is completely shown in Figs. 2 and 3. Figure 2 depicts the LED-based light source comprising a threaded connector (42), power converting electronics (48), a plurality of LEDs (46), an optical system including a reflector (22) and a lens (24), and a light dispersing element (62) arranged at a focal region of the reflector. The LED-based light source depicted in figure 2 also includes a socket and a traffic light

enclosure. Applicants submit that figure 2 together with the disclosure and Fig. 3 showing a unitary light source, provides a complete understanding to the skilled artisan of the unitary threadedly connectable LED-based light source comprising a threaded connector, power converting electronics, a plurality of LEDs, an optical system including a reflector and a lens, and a light dispersing element arranged at a focal region of the reflector. If the Examiner disagrees, Applicants respectfully request that elements lacking from the drawings be specifically identified.

Non-Art Objections and Rejections

The Examiner's objections to informalities in the specification and **claims 23-25** have been addressed by the amendments as suggested by the Examiner. It is respectfully requested that these objections be withdrawn.

Section 112, second paragraph, rejection of **claims 19-22** have been addressed by the amendments. It is respectfully requested that this ground for rejection be withdrawn.

The Claims Distinguish Over the References of Record

Claim 1 calls for an optical element that disperses forwardly directed light produced by the LEDs, the optical element being partially reflective and partially transmissive. Zhang discloses a transparent or diffused optical element. Typically, such optical element is used to scatter the light rays. In contrast, the optical element of claim 1 is designed to closely resemble dispersed light rays of a filament of an incandescent bulb. The transmissive portion of the optical element lets some of the LED light rays pass straight through. The reflective portion of the optical element diverts the rest of the light to reach the reflector. (See figure 3). The optical element of Zhang does not have similar optical properties. The "prior art" is not concerned with dispersing of the LED light since it employs incandescent bulbs. Neither "prior art" nor Zhang, taken singularly or in combination, teaches or suggests simulating a filament light distribution of the LED lamp by designing the optical filter, which is partially transmissive and partially reflective to pass some of the light forward and redirect the rest outwardly.

It is therefore respectfully submitted that **claim 1, and claims 2-5** dependent on claim 1, distinguish patentably over "prior art" and Zhang.

Claim 6 calls for a heat-sinking element for removing heat from the at least one LED. This construction requires the LEDs light assembly to have a heat-sinking element in thermal connection with the LEDs. One example is element 48 of figure 2, that is heat-radiating fins, surrounding power electronics. The heat is removed from the LEDs and power electronics and taken into the threaded connector and the socket. In contrast the "prior art" is not concerned with removing the heat from the LEDs, and Zhang discloses that the heat generated by the power electronics is removed by the bowl that houses the LED assembly. Neither "prior art" nor Zhang, taken singularly or in combination, teaches or suggests using a heat-sinking element for controlling the heat generated by the LED light source and the electronics.

It is therefore respectfully submitted that **claim 6, and claims 7-9** dependent on claim 6, distinguish patentably over "prior art" and Zhang.

Claim 11 has been amended to include the limitations of independent claim 10. **Claim 11** calls for a heat sink for controlling heat generated by the light-emitting diode-based light source. This structure requires a heat element that removes the heat from the LEDs by transporting the heat to the exterior of the lamp. In contrast the "prior art" and Terlep are not concerned with removing heat from the LEDs, and Zhang discloses that the heat generated by the power electronics is removed by the bowl that houses the LED assembly. Neither "prior art," Zhang, Terlep, nor a combination of the references teaches or suggests using a heat-sinking element for drawing away the heat generated by the LEDs.

It is therefore respectfully submitted that **claim 11, and claims 12-18,** dependent on claim 11, distinguish patentably over "prior art," Zhang and Terlep.

Claim 23 calls for a redirection optical element arranged to redirect light emitted from the plurality of LEDs such that the redirected light is coupled into the

optical system of the light producing apparatus. This flexible structure requires the use of the optics that directs the LED emitted light in the direction of optical system peculiar to the particular light producing apparatus. Zhang discloses the optical element that scatters or magnifies the light produced by the LEDs. It does not focus the light rays in the required direction. "Prior art" does not employ an optical element. Terlep discloses the use of semi-spherical or spherical reflector to reflect the light 360° out. However, Terlep does not teach or suggest using an optical reflector to redirect the light such that it is coupled with the optical system. Neither "prior art," Zhang, Terlep, nor a combination of the references teaches or suggests using an optical element to direct the light rays emitted by the LEDs in the specific direction to couple with the optical system of the light apparatus to produce light required by the application.

It is therefore respectfully submitted that **claim 23, and claims 24-25,** dependent on claim 23, distinguish patentably over "prior art," Zhang and Terlep.

CONCLUSION

On the basis of the above amendments and remarks, reconsideration of this application and its early allowance are requested.

If any fee is due in conjunction with the filing of this Amendment, Applicants authorize deduction of that fee from Deposit Account No. 06-0308.

Respectfully submitted,

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